Willow/Central Affordable Housing Development
Acton Community Housing Corporation
Acton Town Hall
472 Main St.
Acton, MA 01720
(978) 263-9611
achc@acton-ma.gov

DESIGN AND CONSTRUCTION

COVER SHEET

1. Proposed buildings by design, ownership type, and size

   Building on 214 Central St.

   - Duplex Farmhouse style
   - Condominium
   - One 3BR unit, one 2BR unit

   Building on 28 Willow St.

   - Bungalow style
   - Condominium
   - 3BR unit

2. Dwelling unit distribution by floor, size, and bedroom/bath number

   - Each unit is on 2 floors
   - 3BR duplex unit: 1526 square feet of living space, 3 bedrooms, 1.5 baths
   - 2BR duplex unit: 1212 square feet of living space, 2 bedrooms, 1.5 baths
   - 3BR bungalow unit: 1320 square feet of living space, 3 bedrooms, 1.5 baths

3. Square footage breakdown of commercial, residential, community, and other usage in the buildings

   - 100% residential usage

4. Number of parking spaces

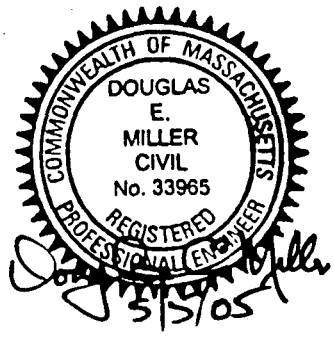
   - 2 per unit

DRAWING ISSUED FOR:

☐ CONCEPT ☐ CONSTRUCTION

■ PERMIT ☐ CONSTRUCTION RECORD

THIS DRAWING MAY BE USED FOR CONSTRUCTION UPON ISSUANCE OF ALL PERMITS AND APPROVALS BY REGULATORY AUTHORITIES.



NO.	DATE	BY	APP.	REVISION DESCRIPTION

GPR Engineering Solutions for Land & Structures

GOLDSMITH, PREST & RINGWALL, INC.

39 MAIN STREET, SUITE 301. AYER, MA 01432

CIVIL & STRUCTURAL ENGINEERING • LAND SURVEYING & LAND PLANNING

VOICE: 978.772.1590 FAX: 978.772.1591

www.gpr-inc.com

SUBSURFACE SEWAGE DISPOSAL SYSTEM NEW CONSTRUCTION

SITE PLAN AND FLOW PROFILE

28 WILLOW STREET AND 214 CENTRAL STREET ACTON, MA

PREPARED FOR:
ACTON COMMUNITY HOUSING CORPORATION
TOWN OF ACTON
P.O. BOX 681
ACTON, MA 01720

INSTALL CLEANOUT NO. 2
AND CONNECTING PIPE
INV. EL. 96.99

INSTALL SEPTIC TANK
AND CONNECTING PIPE

ABANDON EXISTING
WATER SERVICE

PROPOSED WATER
SERVICE (BY OTHERS)

INSTALL BUILDING SEWER
AND CONNECTING PIPE

200' RIVERFRONT BUFFER ZONE LIMIT

WILLOW STREET

PROPOSED 3-BR
DWELLING
T.O. FDN EL. 101.5
BAST SLAB EL. 93.7

PORCH

PROPOSED
DRIVEWAY

1104-2

1104-A

1104-1

NO BASEMENT

BUILDING SETBACK (TYP.)

N/F
JAMES B. KINSBURY

RAZE EXISTING BUILDING
(BY OTHERS)

INSTALL DOSING CHAMBER, ALARM
PANEL, POWER SERVICE, AND
CONNECTING PIPE. TEST PUMP
AND ALARM FUNCTION IN THE
PRESENCE OF ENGINEER AND
LOCAL APPROVING AUTHORITY

N/F
HELEN E. HARRISON

INSTALL FORCE MAIN

INSTALL DISTRIBUTION BOX AND
CONNECTING PIPE

REMOVE AND PROPERLY DISPOSE
OF EXISTING CESSPOOL
(APPROXIMATE LOCATION).

CONSULT GENERAL NOTE NO.
16 REGARDING PRESERVATION
OF VEGETATION

100.5
FG

101.9
FG

102.3
FG

101.9
FG

101.1
FG

101.1
FG

28" WILLOW

PROPOSED
DRIVEWAY

15" MAPLE

1104-5

1104-6

1104-C

1104-B

1104-3

1104-4

LIMIT OF SELECT SOIL FILL

NO BASEMENT

NO BASEMENT

PROPOSED
DRIVEWAY

REMOVE EXISTING FIRE
PIT (BY OTHERS)

INSTALL SOIL ABSORPTION AREA,
VENT, AND CONNECTING PIPE

OVER ALL DISTURBED AREAS, PLACE
4-INCH DEPTH LOAM, FINE GRADE,
AND SEED (PERENNIAL MIX)

N/F
CECILA JOAN FLANNERY

INSTALL CLEANOUT NO. 1
AND CONNECTING PIPE
INV. EL. 99.46

B.M. NO. 2
MAG-NAIL IN 15" MAPLE
EL. 99.53

INSTALL BUILDING SEWER
AND CONNECTING PIPE
INV. OUT EL. 99.5

PROPOSED 3-BR
DWELLING
T.O. FDN EL. 103.0
BAST SLAB EL. 95.2

PROPOSED WATER
SERVICE (BY OTHERS).

CENTRAL STREET

REMOVE AND REPLACE A AND B SOIL
HORIZONS WITH SELECT SOIL FILL

PROPOSED 2-BR
DWELLING
T.O. FDN EL. 103.0
BAST SLAB EL. 95.2

E

40

Willow/Central proposed development
11/14/05
ACHC

Engineering requirements for application

3.6 Existing Site Conditions

A report to accompany the "Natural Features and Existing Conditions Sheet" of the SITE plan described below, which identifies the location and nature of existing buildings, street elevations, traffic patterns, on-site circulation, sight distances, and character of open areas, if any, in the neighborhood, as well existing impacts on municipal facilities, such as water, public safety, sewage treatment, wetlands, and wildlife habitat

3.9 Drainage Calculations

Storm drainage runoff calculations used for the drainage system design must be prepared by and display the seal of a qualified Registered Professional Engineer and must support the sizing of all drainage structures and pipes. These calculations must be based on a recognized standard method (usually the Rational or Soil Conservation Service Methods). The calculations must contain a written summary explaining the rationale of the design so that a lay person can understand the basic design approach and its validity for the SITE in question. Furthermore, the calculations should be fully documented including copies of charts or other reference sources to make review possible. The pre- and post-development runoff rates must be provided. The use of computer generated reports is acceptable, however, the source of the software should be identified. Design of the storm drainage system can generally be based on a 10-year storm event; however, the system design shall not result in serious flood hazards during a 100-year storm.

3.10 Earth Removal Calculations

Calculations for determining the amount of earth to be removed and the amount of FILL to be brought to the SITE shall be prepared by and show the seal of a qualified Registered Professional Engineer.

3.11 Water Balance Calculations

The portion of the SITE in each GROUNDWATER Protection District Zone shall be noted. A hydrologic water balance calculation for pre- and post-development conditions based on annual precipitation that quantifies evapotranspiration, runoff, recharge, and septic flow shall be included.

3.14 Site Plan

The APPLICATION shall include Project SITE plans, legibly drawn to fully detail and explain the intentions of the APPLICANT. SITE plans shall be drawn on 36" x 24" sheets at a suitable standard scale (1 inch = 20, 30, 40, or 50 feet) except

when noted otherwise in these RULES. All plans shall include a reasonable numbering system for lots, buildings, and dwelling units. Each plan sheet shall feature a north arrow, a legend identifying any representative symbols used on the sheet in question, an appropriate title block in the lower right hand corner, and the seal of a Registered Professional Engineer, Registered Land Surveyor, Registered Landscape Architect, Registered Professional Architect, or some combination of these as appropriate to the data on the sheet. Topography and all elevations shall be referenced to the National Geodetic Vertical Datum of 1929 with the location and elevation of the starting bench mark plus at least two additional temporary bench marks on the SITE.

The individual SITE plan components (i.e. Master Plan, Natural Features and Existing Conditions Plan, etc.) may be presented on one or more plan sheets as necessary to present clear and legible plans. Match lines shall be placed in plan locations that feature a minimum of information. Sufficient overlap between plan sheets shall be provided to permit easy reading of plans across match lines. Unless other arrangements are made with staff during the preliminary review process, which other arrangements shall be identified as a part of the Plan, the project SITE plan shall consist of the following:

3.14.1 A ***Title Sheet***:

3.14.2 A ***Master Plan Sheet*** drawn at a scale of not smaller than 1" = 100':

3.14.3 A ***Recordable Plan Sheet*** suitable for recording at the Middlesex South District Registry of Deeds or the Land Court, (which shall be signed and stamped by a registered land surveyor or professional engineer),:

3.14.4 A ***Natural Features and Existing Conditions Plan Sheet***:

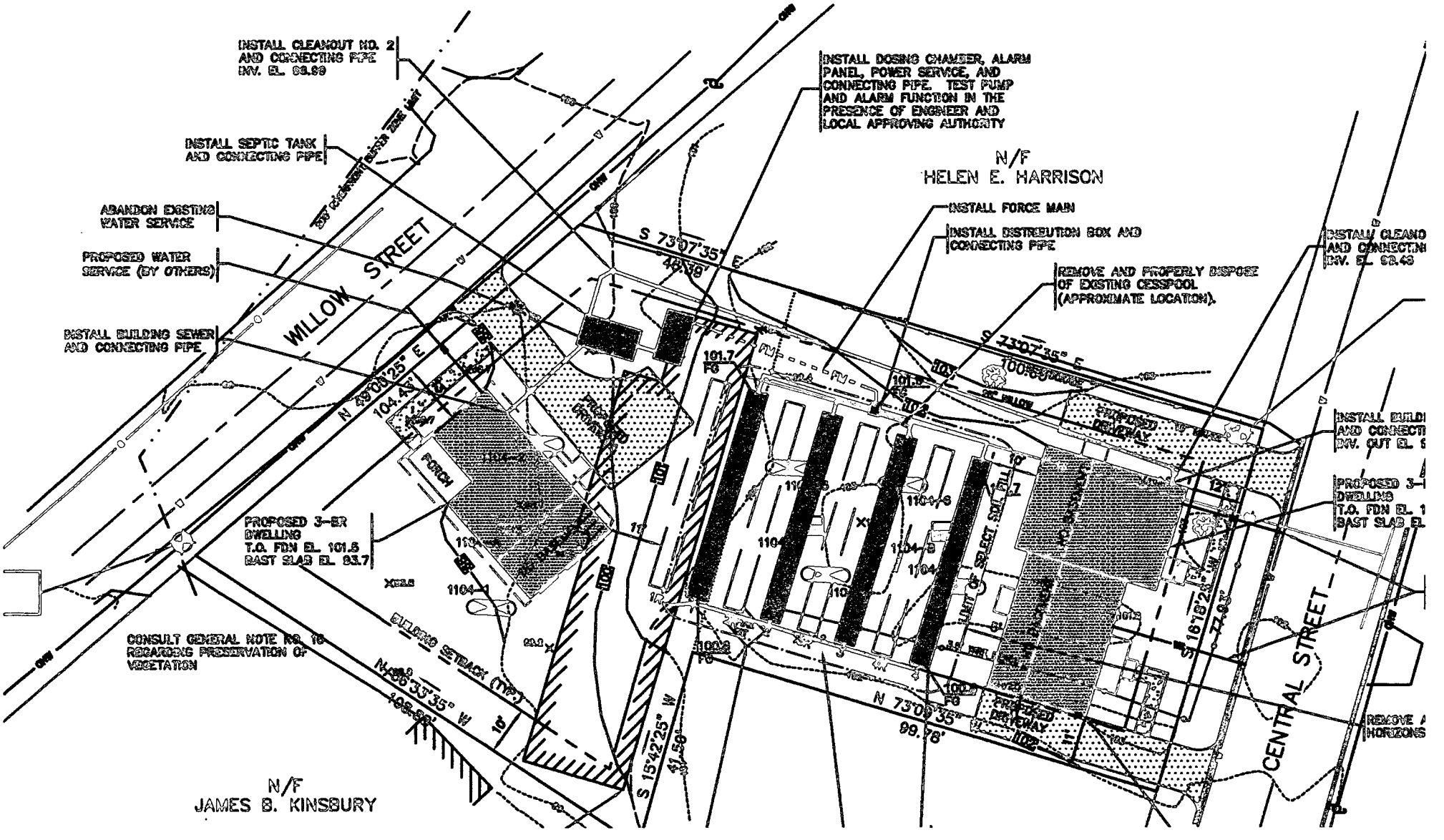
3.14.5 A ***SITE Development Plan Sheet***

3.14.7 A ***Construction Details Plan Sheet***:

3.14.8 A ***Landscape Plan Sheet***:

3.14.9 An ***Erosion and Sedimentation Control Plan Sheet***

Septic System Design
28 Willow St.
214 Central st.



X-Originating-IP: [216.20.70.194]
Subject: RE: ACHC
Date: Thu, 4 Nov 2004 13:45:40 -0500
X-MS-Has-Attach: yes
X-MS-TNEF-Correlator:
Thread-Topic: ACHC
Thread-Index: AcTBxB9+7EqTbb9cRPKFN5KFCv+u+wAHRznQAACwPXAALmzs8A==
From: "Roland Bartl" <rbartl@acton-ma.gov>
To: "Bucky N. Conner" <bconner@gpr-inc.com>
Cc: "Acton Community Housing Corporation" <ACHC@acton-ma.gov>,
"Brent Reagor" <breagor@acton-ma.gov>

Bucky:

Both items, the system design and the site concepts, are part of the project. I would not necessarily view the scope as requiring that things be done in sequential order in which they are listed. So I would not object to your proposal on how to proceed. However, by copy to the ACHC and Brent at the Health Department, I am soliciting their views.

Also, attached is the signed Purchase Order for the job. A hard copy will follow in the mail.

Roland Bartl, AICP
Town Planner, Town of Acton
472 Main Street
Acton, MA 01720
978-264-9636

-----Original Message-----
From: Bucky N. Conner [mailto:bconner@gpr-inc.com]
Sent: Wednesday, November 03, 2004 3:22 PM
To: Roland Bartl
Subject: RE: ACHC

Roland,

Another thought. The scope of work the Town proposed seems to want an sewage disposal system (SDS) design before site concepts are done (or approved). We recommend that we produce layout concepts *ahead* of the SDS design. The soils test show that pretty much any location will work for the SDS. But, if we design the SDS and later have to change its location due to one site layout being preferred over another, there will be additional cost to redesign the SDS.

You timely input is appreciated, as we are supposed to have all deliverables to you this month.

-bucky

++++++++++++++++++++++++++
Bucky Conner, PE
Goldsmith, Prest & Ringwall, Inc.
39 Main Street, Suite 301, Ayer, MA 01432-1378
T (978) 772-1590; F (978) 772-1591
http://www.gpr-inc.com/

-----Original Message-----
From: Roland Bartl [mailto:rbartl@acton-ma.gov]
Sent: Wednesday, November 03, 2004 3:14 PM
To: Bucky N. Conner
Subject: RE: ACHC

Two other bidders:
Stamski & McNary, Inc: $8,000
Foresite Engineering Ass., Inc: $9,000

I am still trying to shake loose the Town Purchase Order for you. It is in the "system", and I will get it to you as soon as have it signed.

Roland Bartl, AICP
Town Planner, Town of Acton
472 Main Street
Acton, MA 01720
978-264-9636

-----Original Message-----
From: Bucky N. Conner [mailto:bconner@gpr-inc.com]
Sent: Wednesday, November 03, 2004 11:30 AM
To: Roland Bartl
Subject: ACHC

Roland,

Would you please provide a list of bidders and proposed cost for this project? Thank you. A quick email listing is fine - nothing official.

-bucky

++++++++++++++++++++++++++
Bucky Conner, PE
Goldsmith, Prest & Ringwall, Inc.
39 Main Street, Suite 301, Ayer, MA 01432-1378
T (978) 772-1590; F (978) 772-1591
http://www.gpr-inc.com/

 Scan0018.PDF

X-Originating-IP: [216.20.70.194]
Subject: RE: YAHOOOOOO
Date: Wed, 27 Oct 2004 16:40:13 -0400
X-MS-Has-Attach:
X-MS-TNEF-Correlator:
Thread-Topic: YAHOOOOOO
Thread-Index: AcS8USr9Q5GtE4nhQ0CUaWYvShujEAAEp5dQ
From: "Roland Bartl" <rbartl@acton-ma.gov>
To: "Nancy Tavernier" <ntavern@comcast.net>
Cc: "Brent Reagor" <breagor@acton-ma.gov>,
"John Murray" <jmurray@acton-ma.gov>

Nancy:

I think GPR's proposal seems reasonably responsive and it comes in within budget. The only thing missing is confirmation of 1-foot contours on the topo plan - at least I could not fid it. While this omission would worry me a little as potential harbinger of the firm's attention to detail (after all we asked them specifically for it), this is a minor item you can negotiate and clarify. My guess is that 1-foot contours is what they would do anyway because the site is relatively flat. Larger intervals would probably not show anything at all.
They are offering up to three site plan scenarios rather than paper cut-outs as requested in the scope. I think their offer of more than one plan option serves the same purpose and should fulfill our desired objective to meet bid law requirements.
I'd go for it. I know Bruce Ringwall, one of the firm's principals, as a rather conscientious and reliable individual.

✓ it's there

Roland Bartl, AICP
Town Planner, Town of Acton
472 Main Street
Acton, MA 01720
978-264-9636

----Original Message----
From: Nancy Tavernier
Sent: Wednesday, October 27, 2004 2:17 PM
To: Roland Bartl; Brent Reagor
Subject: YAHOOOOOO

HI Roland and Brent,

The last one came in at $4800! Look it over it you could please and comment on whether or not you think it is responsive since ACHC will be meeting at 7AM tomorrow.

I would say that if this looks ok, the soil tests could proceed on 11/2.

Thanks.

Nancy

GPR
Civil & Structural Engineering • Land Planning • Land Surveying
Engineering Solutions for Land & Structures

29 November 2004 GPR File No. 041114

Roland Bartl, Planner
Town of Acton
PO Box 681
Acton, MA 01720

Re: Innovative/Alternative Septic Treatment Options
Willow and Central Streets

Dear Roland,

Per our contract, we have evaluated options for Innovative/Alternative (IA) sewage treatment for your Willow & Central Street project. IA provides secondary wastewater treatment prior to final disposal on site. Secondary treatment greatly improves the quality of effluent (sewage) before it returns to the environment. Such systems are often required when provisional or remedial permits are required from the State, or when nitrogen loading is a concern. This is not the case for the Town's project.

Other than being kinder to the environment, there is no significant reason for installing an IA as part of this septic system. No reduction to groundwater separation or reduction to the disposal field can be made be installing an IA on this site. A brief list of pros and cons is provided.

Advantages	Disadvantages
1. Possibly extend the life of the primary disposal area	1. Increase cost to install
2. Improve quality of discharge to environment	2. Requires additional maintenance
	3. Minor cost to operate (electricity)
	4. Can require additional area on site

If an IA were used, we would recommend a system that takes up very little additional room. This limits the list of likely systems to a Norweco Singulair, a Jet system, or a FAST system. All are similar in that they can reside inside a modified septic tank, and therefore need little additional space on site. All technologies use an aeration system to provide secondary treatment. The Singulair sells for roughly $6,300, the Jet is roughly $6,500, and the FAST comes in around $13,500. Costs include installation and a year's maintenance contract.

If you wish to pursue one of these technologies or if you have any questions, please contact me.

Sincerely,

Bucky Conner, PE
Project Manager

CC: GPR file

No. 041114 Date: 11/2/2004

Commonwealth of Massachusetts
Acton, Massachusetts
Soil Suitability Assessment for On-site Sewage Disposal

Performed By: Mark Godfrey, Goldsmith, Prest & Ringwall, Inc. Date: 11/2/2004
Witnessed By: Brent Reagor, R.S., Acton Board of Health

Location Address or Lot No. 28 Willow Street (Map F-2B, Parcel 64) & 214 Central Street (Map F-2B, Parcel 65)	Owner's Name: Town of Acton
	Address: 472 Main Street, Acton, MA 01720
New Construction ☒ Repair ☐	Telephone No.: (978) 264-9634

Office Review

Published Soil Survey Available: No ☐ Yes ☒

Year Published 1995 Publication Scale 1:25,000 Soil Map Unit 261, Merrimac

Drainage Class Excessively Drained Soil Limitations few limitations

Surficial Geologic Report Available: No ☐ Yes ☒

Year Published 1953 Publication Scale 1:31680

Geologic Material (Map Unit) Qkt

Landform Kame Terrace

Flood Insurance Rate Map: 250176 0001 C

Above 500 year flood boundary No ☐ Yes ☒

Within 500 year flood boundary No ☒ Yes ☐

Within 100 year flood boundary No ☒ Yes ☐

Wetland Area:

National Wetland Inventory Map (map unit) N/A - Upland

Wetlands Conservancy Program Map (map unit) N/A - Upland

Current Water Resource Conditions (USGS): Month September 2004

Range :Above Normal ☒ Normal ☐ Below Normal ☐

Other References Reviewed: Massachusetts National Heritage Atlas 2003 Edition, MassGIS, Acton Zone 3

Location Address or Lot No. 28 Willow Street and 214 Central Street, Acton MA

On-site Review

Deep Hole Number: 1004-1 Date: 11/2/2004 Time: 8:00 AM Weather: Ptly Cldy, 50 deg.F

Location (identify on site plan) see attached sketch

Land Use residential Slope(%) 1-3% Surface Stones none observed

Vegetation grass, weeds

Landform kame terrace

Position on landscape (sketch on the back) see attached sketch

Distances from:

Open Water Body >300 feet Drainage way >200 feet

Possible Wet Area >200 feet Property Line >20 feet

Drinking Water Well N/A feet Other -----

DEEP OBSERVATION HOLE LOG

1004-1

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0 - 31	Fill	-----	-----	NONE OBSERVED	-----
31 - 117	C	S	2.5Y 6/4	NONE OBSERVED	loose(ml)/single grain(sg)/10% gravel/ 5% cobbles/medium(m)-coarse(c) sands stratified, well-sorted sands & gravels

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Proglacial Outwash Depth to Bedrock: >>117"

Depth to Groundwater: Standing Water in the Hole: 117" Weeping from Pit Face: 108"

Estimated Seasonal High Ground Water: 108"

Location Address or Lot No. 28 Willow Street and 214 Central Street, Acton MA

On-site Review

Deep Hole Number: 1004-2 Date: 11/2/2004 Time: 8:20 AM Weather: Ptly Cldy, 50 deg.F

Location (identify on site plan) see attached sketch

Land Use residential Slope(%) 1-3% Surface Stones none observed

Vegetation grass, weeds

Landform kame terrace

Position on landscape (sketch on the back) see attached sketch

Distances from:

Open Water Body >300 feet Drainage way >200 feet

Possible Wet Area >200 feet Property Line >20 feet

Drinking Water Well N/A feet Other -----

DEEP OBSERVATION HOLE LOG

1004-2

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0 - 14	A	SL	10YR 3/4	NONE OBSERVED	granular(gr)/weak(fw)/friable(mfr)/ abrupt(a)/smooth(s)
14 - 23	Bw	LS	10YR 5/6	NONE OBSERVED	massive(m)/weak(fw)/friable(mfr)/clear(c)/ smooth(s)
23 - 117	C	S	2.5Y 6/4	NONE OBSERVED	loose(ml)/single grain(sg)/10% gravel/ 5% cobbles/medium(m)-coarse(c) sands/ stratified, well-sorted sands & gravels

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Proglacial Outwash Depth to Bedrock: >>117"

Depth to Groundwater: Standing Water in the Hole: 117" Weeping from Pit Face: 108"

Estimated Seasonal High Ground Water: 108"

Location Address or Lot No. 28 Willow Street and 214 Central Street, Acton MA

On-site Review

Deep Hole Number: 1004-3 Date: 11/2/2004 Time: 8:40 AM Weather: Ptly Cldy, 50 deg.F

Location (identify on site plan) see attached sketch

Land Use residential Slope(%) 1-3% Surface Stones none observed

Vegetation grass, weeds

Landform kame terrace

Position on landscape (sketch on the back) see attached sketch

Distances from:

Open Water Body >300 feet Drainage way >200 feet

Possible Wet Area >200 feet Property Line >10 feet

Drinking Water Well N/A feet Other -----

DEEP OBSERVATION HOLE LOG

1004-3

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0 - 11	A	SL	10YR 3/4	NONE OBSERVED	granular(gr)/weak(fw)/friable(mfr)/ abrupt(a)/smooth(s)
11 - 20	Bw	LS	10YR 5/6	NONE OBSERVED	massive(m)/weak(fw)/friable(mfr)/clear(c)/ smooth(s)
20 - 60	C1	S	2.5Y 6/4	NONE OBSERVED	loose(ml)/single grain(sg)/>10% gravel/ >5% cobbles/medium(m)-coarse(c) sands
60 - 129	C2	S	2.5Y 6/2		loose(ml)/single grain(sg)/<5% gravel/ medium(m)-coarse(c) sands (stratified, well-sorted sands & gravels)

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Proglacial Outwash Depth to Bedrock: >>129"

Depth to Groundwater: Standing Water in the Hole: None Observed Weeping from Pit Face: None Observed

Estimated Seasonal High Ground Water: 129"

Location Address or Lot No. 28 Willow Street and 214 Central Street, Acton MA

On-site Review

Deep Hole Number: 1004-4 Date: 11/2/2004 Time: 9:20 AM Weather: Ptly Cldy, 50 deg.F

Location (identify on site plan) see attached sketch

Land Use residential Slope(%) 1-3% Surface Stones none observed

Vegetation grass, weeds

Landform kame terrace

Position on landscape (sketch on the back) see attached sketch

Distances from:

Open Water Body >300 feet Drainage way >200 feet

Possible Wet Area >200 feet Property Line >10" feet

Drinking Water Well N/A feet Other -----

DEEP OBSERVATION HOLE LOG

1004-4

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0 - 31	Fill	-----	-----	NONE OBSERVED	-----
31 - 57	C1	S	2.5Y 6/4	NONE OBSERVED	loose(ml)/single grain(sg)/>10% gravel/ >5% cobbles/medium(m)-coarse(c) sands
57 - 122	C2	S	2.5Y 6/2	NONE OBSERVED	loose(ml)/single grain(sg)/<5% gravel/ medium(m)-coarse(c) sands (stratified, well-sorted sands & gravels)

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Proglacial Outwash Depth to Bedrock: >>122"

Depth to Groundwater: Standing Water in the Hole: None Observed Weeping from Pit Face: None Observed

Estimated Seasonal High Ground Water: 122"

Location Address or Lot No. 28 Willow Street and 214 Central Street, Acton MA

On-site Review

Deep Hole Number: 1004-5 Date: 11/2/2004 Time: 9:45 AM Weather: Ptly Cldy, 50 deg.F

Location (identify on site plan) see attached sketch

Land Use residential Slope(%) 1-3% Surface Stones none observed

Vegetation grass, weeds

Landform kame terrace

Position on landscape (sketch on the back) see attached sketch

Distances from:

Open Water Body >300 feet Drainage way >200 feet

Possible Wet Area >200 feet Property Line >10 feet

Drinking Water Well N/A feet Other -----

DEEP OBSERVATION HOLE LOG

1004-5

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0 - 21	Fill	-----	-----	NONE OBSERVED	-----
21 - 55	C1	S	2.5Y 6/4	NONE OBSERVED	loose(ml)/single grain(sg)/>10% gravel/ >5% cobbles/medium(m)-coarse(c) sands
55 - 131	C2	S	2.5Y 6/2	NONE OBSERVED	loose(ml)/single grain(sg)/<5% gravel/ medium(m)-coarse(c) sands (stratified, well-sorted sands & gravels)

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Proglacial Outwash Depth to Bedrock: >>131"

Depth to Groundwater: Standing Water in the Hole: None Observed Weeping from Pit Face: None Observed

Estimated Seasonal High Ground Water: 131"

Location Address or Lot No. 28 Willow Street and 214 Central Street, Acton MA

On-site Review

Deep Hole Number: 1004-6 Date: 11/2/2004 Time: 10:20 AM Weather: Ptly Cldy, 50 deg.F

Location (identify on site plan) see attached sketch

Land Use residential Slope(%) 1-3% Surface Stones none observed

Vegetation grass, weeds

Landform kame terrace

Position on landscape (sketch on the back) see attached sketch

Distances from:

Open Water Body >300 feet Drainage way >200 feet

Possible Wet Area >200 feet Property Line >10 feet

Drinking Water Well N/A feet Other -----

DEEP OBSERVATION HOLE LOG

1004-6

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0 - 12	Fill	-----	-----	NONE OBSERVED	-----
12 - 62	C1	S	2.5Y 6/4	NONE OBSERVED	loose(ml)/single grain(sg)/>10% gravel/ >5% cobbles/medium(m)-coarse(c) sands
62 - 129	C2	S	2.5Y 6/2	NONE OBSERVED	loose(ml)/single grain(sg)/<5% gravel/ medium(m)-coarse(c) sands (stratified, well-sorted sands & gravels)

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) Proglacial Outwash Depth to Bedrock: >>129"

Depth to Groundwater: Standing Water in the Hole: None Observed Weeping from Pit Face: None Observed

Estimated Seasonal High Ground Water: 129"

Location Address or Lot No. 28 Willow Street and 214 Central Street, Acton MA

Determination for Seasonal High Water Table

Method Used:

- ☐ Depth observed standing in observation hole ..... inches
- ☒ Depth weeping from side of observation hole 108" inches
- ☐ Depth to soil mottles .....inches
- ☐ Ground water adjustment ----- feet

Index Well Number ----- Reading Date ----- Index well level -----

Adjustment factor ----- Adjusted ground water level -----

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? Yes

If not, what is the depth of naturally occurring pervious material? -----

Certification

I certify that on May 25, 2000 (date) I have passed the soil evaluator examination approved by the Department of Environmental Protection and that the above analysis was performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017.

Signature _____ Date 11/2/04

FORM 12 - PERCOLATION TEST

Location Address or Lot No. 28 Willow Street and 214 Central Street, Acton MA

COMMONWEALTH OF MASSACHUSETTS

Acton , Massachusetts

Percolation Test* EL. TBD				
Date: 11/2/2004		Time: 8:30 AM		
Observation Hole #	1004-A	1004-B	1004-C	
Depth of Perc	51 inches	53 inches	48 inches	
Start Pre-soak	8:30 AM	9:30 AM	10:00 AM	
End Pre-soak	-----	-----	-----	
Time at 12"	Unable to hold water during	Unable to hold water during	Unable to hold water during	
Time at 9"	saturation.	saturation.	saturation.	
Time at 6"	-----	-----	-----	
Time (9"-6")	-----	-----	-----	
Rate Min./Inch	<2 MPI	<2 MPI	<2 MPI	

* Minimum of 1 percolation test must be performed in-both the primary area AND reserve area.

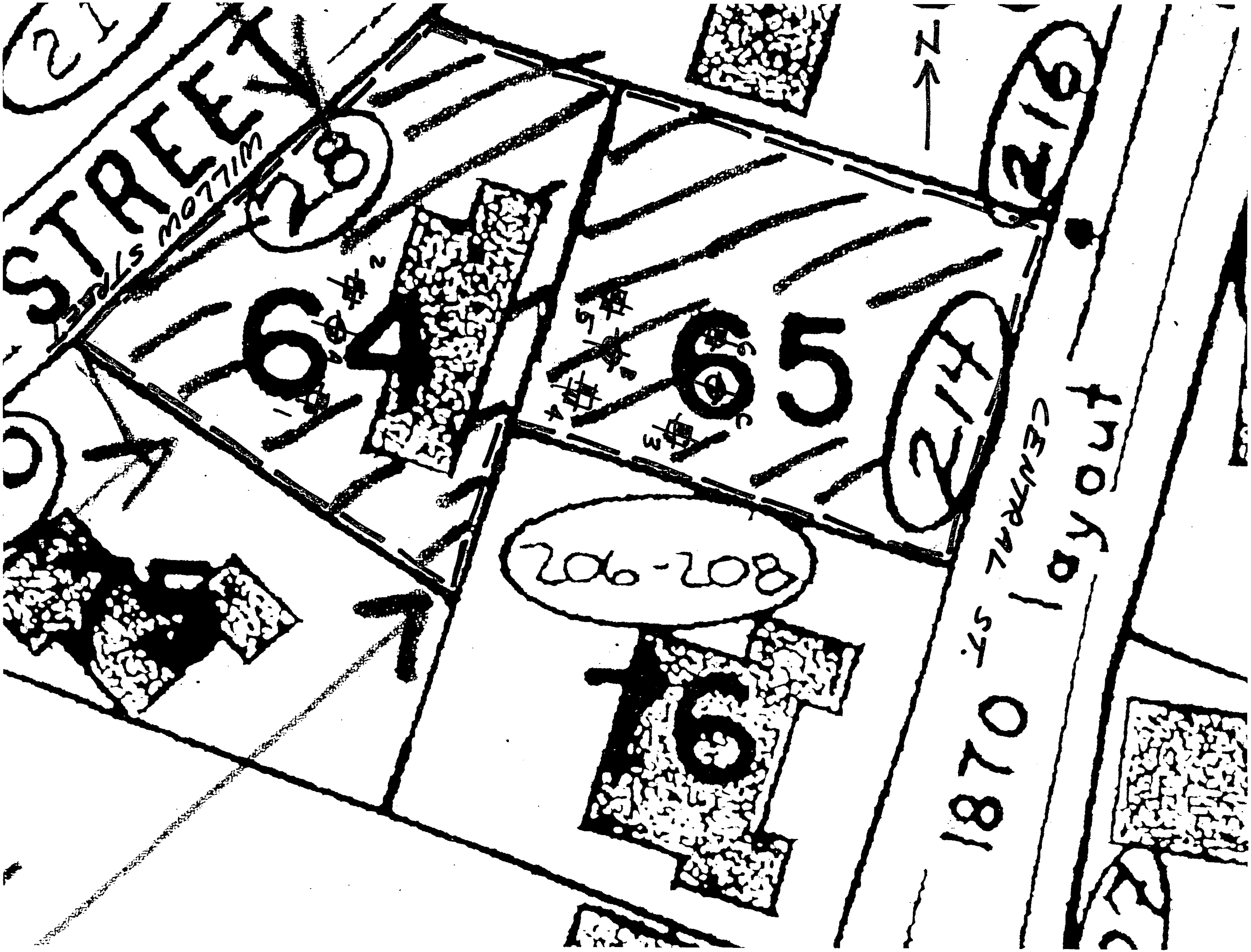
Site Passed ☒ Site Failed ☐

Performed By: Mark Godfrey, GPR, Inc.

Witnessed By: Brent Reagor, RS, Acton BOH.

Comments: .....

DEP APPROVED FORM-12/07/95



21
STREET
28
64
65
216
214
206-208
76
N
CENTRAL ST
1870 layout

STAMSKI AND MCNARY, INC.
80 Harris Street
Acton, Massachusetts 01720
(978) 263-8585
FAX (978) 263-9883

WILLIAM F. MCNARY, P.L.S.
JOSEPH MARCH, P.E., P.L.S.

August 15, 2006

Corey York
Acton Engineering Department
472 Main Street
Acton, MA 01742

Re: 28 Willow Street and 214 Central Street, Acton, MA

Dear Mr. York,

In response to your comments dated August 11, 2006 we have revised the plans for aforementioned project. The revisions are as follows:

- See sheet 2 for revised sidewalk detail.
- Note 12 has been added to sheet 2 and existing survey monuments are now shown on sheets 1 and 4.
- Note 13 has been added to sheet 2.
- The drainage system operation and maintenance plan has been modified.

We have included a copy of the plan set with the aforementioned revisions for your review.

Please contact this office with any questions you may have regarding these revisions.

Stamski and McNary, Inc.

George Dimakarakos, PE

Cc: Acton Community Housing Corporation

From: Corey York <cyork@acton-ma.gov>
To: gd@stamskiandmcnary.com
Cc: Ryan & Erin Bettez <bettezfamily@yahoo.com>; Bruce Stamski <bstamski@acton-ma.gov>
Sent: Friday, August 11, 2006 4:29:15 PM
Subject: Willow / Central Comp Plan

FYI

I took a very quick glance at the plans in my office and I have just a few comments:

- The sidewalk detail should be revised to require 2.5" of pavement (2 courses) with 9" of gravel (3" processed & 6" bank run) to match the typical town cross-section
- I would like the existing survey markers labeled on the plans, with notes to locate prior to construction, mark them in the field, protect these points during construction and be required to have a surveyor reset and certify any survey markers that are damaged or disturbed during construction.
- Add a note to remind the contractor to apply for Permits to Work within a Public Way for any work in the ROW such as the new driveway aprons, underground utilities, the new sidewalk, etc...
- I would like the description of the roof drywell to explain in more detail how to monitor the water levels in the drywell so that future homeowners understand when this drywell begins to clog. You might want to state the approximate time it will take after a rainfall event for the drywell to completely infiltrate all the runoff and become dry.

Thank You,
Corey York
Acton Engineering Department

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Cc: Acton Community Housing Corporation

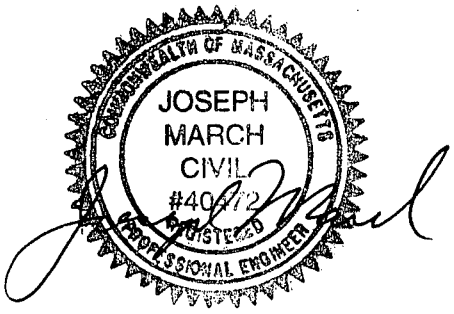
Stamski And McNary, Inc.
Engineering - Planning – Surveying
80 Harris Street; Acton, MA 01720; (978) 263-8585

Comprehensive Permit Plan

3.6 Existing Site Conditions
3.9 Drainage Calculations
3.10 Earth Removal Calculations
3.11 Water Balance Calculations

for

28 Willow Street
212-214 Central Street
Acton, MA 01720



Prepared for: **Acton Community Housing Corporation**
472 Main Street
Acton, MA 01720

Date: July 17, 2006

SM3905

3.6 Existing Site Conditions

Existing site conditions report for 28 Willow Street and 212-214 Central Street.

The subject property consists of two adjoining parcels of land in a residential neighborhood in West Acton. There are no wetlands on site and the two parcels combined are 15,335 square feet. The current zoning is VR (village residential). Central Street and Willow Street are generally flat and the intersection of Central and Willow Streets is approximately 300 feet from the property. The intersection of Summer Street with Willow and Central Streets being 700 feet and 600 feet respectively. It is located within 1.3 miles from the MBTA South Acton Commuter Rail Stop, which is on the Fitchburg to North Station line. It is within walking distance to elementary school and preschool, conservation trails, playground, post office, churches, library, community theatre, and several businesses. 28 Willow Street contains approximately 2,000 square feet of an existing office/garage building. The office/garage building is in serious disrepair. It is a safety hazard as well as an eyesore and will be razed. The property was most recently used as a septic system installation and repair company. These parcels were taken by the town of Acton for unpaid back taxes in 1998. The town of Acton has spent over $70,000 for significant environmental remediation work through the 21E process to clean a petroleum contamination problem. The site has been cleaned under the supervision of a licensed site professional and approved for residential use.

3.9 Drainage Calculations

Drainage Calculations for 28 Willow Street and 212-214 Central Street.

The subject property contains an existing office/garage building that will be razed and has approximately 2,090 square feet of roof area. The remainder of the property contains grass and some trees. There will be, under proposed conditions, approximately 1,570 square feet of pavement and approximately 2,268 square feet of roof area. The remainder of the proposed site will be grass with some shrubs. The total proposed impervious area is 3,856 square feet. Since there is more impervious under proposed conditions, runoff from the difference needs to be mitigated. The difference is 1,766 square feet (3,856 – 2,090). Runoff from 1,836 square feet of proposed impervious area (runoff from the roof and driveway at 28 Willow Street and runoff from a portion of the roof at 214 Central Street) will be directly recharged via roof drain drywells and an infiltration trench. The remaining proposed impervious area of 2,020 square feet is less than the existing impervious area of 2,090 square feet. Therefore, there will not be an increase in runoff due to development.

Roof drain drywell sizing calculations

*Infiltration rate of soil: 8.27 in/hr (16.54 ft/day)

Rainfall from 100-year storm event: 6.4 in

Roof area: 1,311 sf

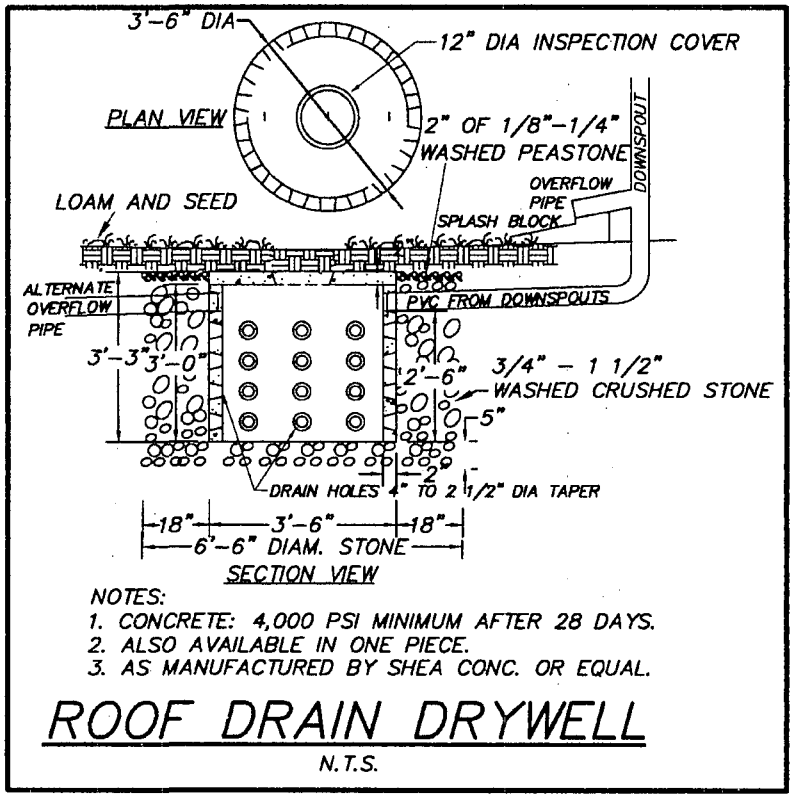
Runoff from roof: 1,311 sf x (6.4 in /12) = 699 cf

Required drywell size to infiltrate runoff in 1 day: 699 cf / 16.5 ft/day = 42.4 sf

A drywell with 42.4 sf of leaching area is required to infiltrate the 100-year storm event in 24 hours.

Proposed: 2-drywells with 210 sf of leaching area (105 sf each).

Conclusion: the proposed drywells with 210 sf of leaching area is larger than the required leaching area of 42.4 sf. Therefore, the proposed roof drain drywell will infiltrate the 100-year storm event in 24 hours.



* See table 2-1

Infiltration Trench sizing calculations

*Infiltration rate of soil: 8.27 in/hr (16.54 ft/day)

Rainfall from 100-year storm event: 6.4 in

Paved driveway area: 709 sf

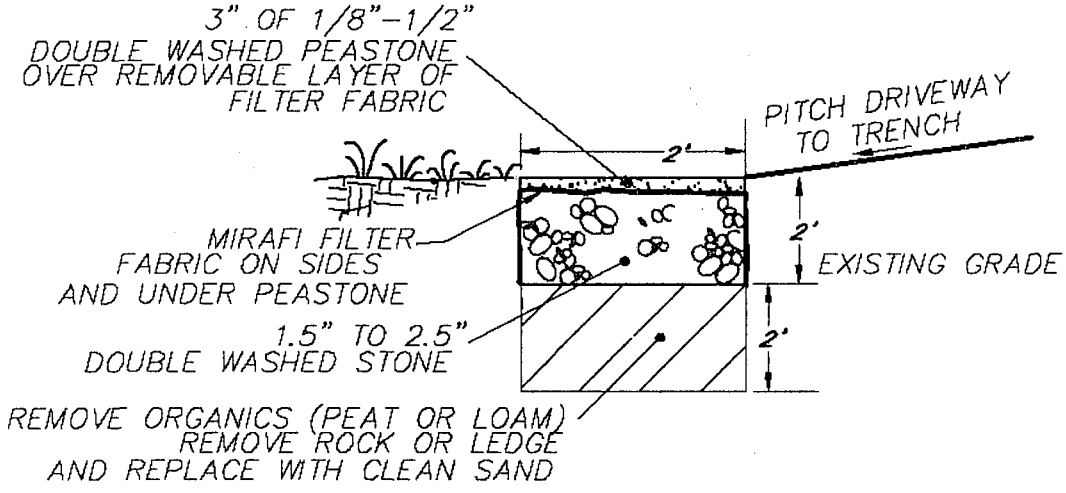
Runoff from driveway: 709 sf x (6.4 in /12) = 378 cf

Required trench size to infiltrate runoff in 1 day: 378 cf / 16.5 ft/day = 23 sf

An infiltration trench with 23 sf of leaching area is required to infiltrate the 100-year storm event in 24 hours.

Proposed: an infiltration trench 30' long x 2' wide x 2' deep (6 sf of leaching area per foot of trench).

Conclusion: the proposed infiltration trench with 180 sf of leaching area is larger than the required leaching area of 23 sf. Therefore, the proposed infiltration trench will infiltrate the 100-year storm event in 24 hours.



INFILTRATION TRENCH DETAIL

NOT TO SCALE

TABLE 2-1 HYDROLOGIC SOIL PROPERTIES CLASSIFIED BY SOIL TEXTURE*

Texture Class	Effective Water Capacity (C_w) cm/cm	Minimum Infiltration Rate (f) in/hr	Hydrologic Soil Grouping
Sand	0.35	8.27	A
Loamy Sand	0.31	2.41	A
Sandy Loam	0.25	1.02	B
Loam	0.19	.52	B
Silt Loam	0.17	.27	C
Sandy Clay Loam	0.14	.17	C
Clay Loam	0.14	.09	D
Silty Clay Loam	0.11	.06	D
Sandy Clay	0.09	.05	D
Silty Clay	0.09	.04	D
Clay	0.08	.02	D

* Source: Rawls, Brakensiek and Saxton, 1982

$$\frac{8.27\ \text{IN}}{\text{HR}} \times \frac{1\ \text{FT}}{12\ \text{IN}} \times \frac{24\ \text{HR}}{1\ \text{DAY}} = 16.54\ \text{FT/DAY}$$

3.10 Earth Removal Calculations

Earth removal calculations for 28 Willow Street and 212-214 Central Street.

	Cut (cy)	Fill (cy)
Excavation for Cellar holes	544	
Excavation for Septic tanks	36	
Site Grading	58	134
Total	638	134

Conclusion: 638 cy – 134 cy = 504 cy will be removed from the site.

3.11 Water Balance Calculations

Water Balance Calculations for 28 Willow Street and 212-214 Central Street.

The subject property contains an existing office/garage building that will be razed and has approximately 2,090 square feet of roof area. The remainder of the property contains grass and some trees. There will be, under proposed conditions, approximately 1,570 square feet of pavement and approximately 2,268 square feet of roof area. The remainder of the proposed site will be grass with some shrubs. The total proposed impervious area is 3,856 square feet. Since there is more impervious under proposed conditions, the difference needs to be mitigated. The difference is 1,766 square feet (3,856 – 2,090). Runoff from 1,836 square feet of proposed impervious area (runoff from the roof and driveway at 28 Willow Street and runoff from a portion of the roof at 214 Central Street) will be directly recharged via roof drain drywells and an infiltration trench. The proposed septic systems have a combined flow rate of 990 gallons per day, which is directly recharged. The amount of infiltration proposed after development is greater than the amount of infiltration under current conditions. Therefore, the proposed site will meet the requirement of the town of Acton, Zoning Bylaw, Section 4.3, Groundwater Protection District, which requires the amount of annual precipitation being captured and recharged shall not be reduced due to development.

FORM DIR

DEVELOPMENT IMPACT REPORT

The Development Impact Report (DIR) is intended to serve as a guide to the applicant in formulating the development proposal, as well as a guide to the Planning Board in its evaluation of the proposed development in the context of existing conditions and planning efforts by the Town. The DIR should be prepared as early in the development process as possible, even if certain aspects are unknown at that time. It is recommended that the various aspects of the DIR, together with a conceptual development plan, are discussed with the Planning Department staff as soon as possible, prior to the filing of an application for approval of a preliminary plan.

The DIR seeks to raise the broad range of issues generally associated with development plans in a form and in a language that is understandable to a layperson. It assesses development impacts which could possibly be avoided or mitigated if recognized early in the development process. Other portions of the DIR request information which will help the Town plan ahead and ensure adequate services in the future. It is the hope of the Planning Board that the use of the DIR, along with early consultations with the Planning Department staff and the applicant's continuing cooperation throughout the development process, will foster a development of excellent quality and design sensitive to Acton's natural and historic heritage and other community concerns.

The DIR shall be filed with an application for approval of a preliminary and a definitive subdivision plan. The DIR shall clearly and methodically assess the relationship of the proposed development to the natural, physical, and social environment. In preparing the DIR, professionals of the respective fields shall be consulted and a systematic, interdisciplinary approach shall be utilized which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning, designing and engineering of the proposed project.

DEVELOPMENT IMPACT REPORT

Please type or print information in blanks below.

1. Name of Proposed Subdivision: **28 Willow Street, 212-214 Central Street**

2. Location: **28 Willow Street, 212 Central Street, and 214 Central Street**

3. Name of Applicant(s): **Acton Community Housing Corporation**

4. Brief Description of the Proposed Project: **Comprehensive Permit for a two building, three unit housing development.**

5. Name of Individual Preparing this DIR: **George Demakarakos, P.E.**

   Address: **Stamski and McNary, Inc., 80 Harris Street, Acton, MA**

   Business Phone: **978-263-8585 x112**

6. Professional Credentials: **Commonwealth of MA Registered Professional Engineer**

A. Site Description

7. Present permitted and actual land uses by percentage of the site.

Uses	*Percentage*
Industrial	0
Commercial	0
Residential	**100**
Forest	0
Agricultural	0
Other (specify)	0

8. Total acreage on the site: **0.35+/- acres.**

Approximate Acreage	At Present	After Completion
Meadow or Brushland (non agriculture)	0	0
Forested	0	0
Agricultural (includes orchards, cropland, pasture)	0	0
Wetland	0	0
Water Surface Area	0	0
Flood Plain	0	0
Unvegetated (rock, earth, or fill)	0	0
Roads, buildings and other impervious surfaces	**0.05 +/-**	**0.08 +/-**
Other (indicate type) Lawn Area	**0.30 +/-**	**0.27 +/-**

9. List the zoning districts in which the site is located and indicate the percentage of the site in each district. *Note: be sure to include overlay zoning districts.*

District	*Percentage*
VR (Village Residential)	**100**
Groundwater Protection District Zone 3	**100**

10. Predominant soil type(s) on the site: **Soil Map Unit 626B-Merrimac Urban Land Complex**

Soil drainage (Use the US Soil Conservation Service's definition)

Soil Type	*% of the Site*
Well drained	
Moderately well drained	**100**
Poorly drained	

11. Are there bedrock outcroppings on the site? ____yes ___X___no

12. Approximate percentage of proposed site with slopes between:

Slope	*% of the Site*
0 - 10%	**100**
10 - 15%	0
greater than 15%	0

13. In which of the Groundwater Protection Districts in the site located? How close is the site to a public well?

Zone(s): **3** Proximity to a public well: **3,700'+/- (Clapp Well)**

14. Does the project site contain any species of plant or animal life that is identified as rare or endangered? (Consult with the Massachusetts National Heritage Program and the Acton Natural Resources Director).

____yes ___X___no

If yes, specify: _____

_____

15. Are there any unusual or unique features on the site such as trees larger than 30 inches D.B.H., bogs, kettle ponds, eskers, drumlins, quarries, distinctive rock formation or granite bridges?

____yes ___X___no

If yes, specify:_____

_____

16. Are there any established foot-paths running through the site or railroad right of ways?
____yes _X___no

If yes, specify:_____
_____

17. Is the site presently used by the community or neighborhood as an open space or recreation area? ____yes _X___no

Is the site adjacent to conservation land or a recreation area? ____yes _X___no

If yes, specify:_____
_____

18. Does the site include scenic views or will the proposed development cause any scenic vistas to be obstructed from view? ____yes _X___no

If yes, specify:_____
_____

19. Are there wetlands, lakes, ponds, streams, or rivers within or contiguous to the site?
____yes _X___no

If yes, specify:_____
_____

20. Is there any farmland or forest land on the site protected under Chapter 61A or 61B of the Massachusetts General Laws? ____yes _X___no

If yes, specify:_____
_____

21. Has the site ever been used for the disposal of hazardous waste? Has a 21E Study been conducted for the site? __X__yes _ ___no

If yes, specify results: **Site was remediated.**

22. Will the proposed activity require use and/or storage of hazardous materials, or generation of hazardous waste? ____yes _X___no

If yes, specify_____
_____

23. Does the project contain any buildings or sites of historic or archaeological significance? (Consult with the Acton Historic Commission or the Action Historical Society.)
___yes _X_ no

If yes, please describe_____

24. Is the project contiguous to or does it contain a building in a local historic district or national register district?
___yes _X_ no

25. Is the project contiguous to any section of the Isaac Davis Trail?
___yes _X_ no

If yes, please describe_____

B. Circulation System

26. What is the average weekday traffic and peak hour traffic volumes generated by the proposed subdivision?

	Single Family	Town Houses
Average weekday traffic	9.57	11.72
Average peak hour volume AM	0.75	0.88
Average peak hour volume PM	1.01	1.04

27. Existing street(s) providing access to proposed subdivision:

Name: **Willow Street** Town Classification: **Local**
Name: **Central Street** Town Classification: **Collector**

28. Existing intersection(s): list intersections located within 1000 feet of any access to the proposed development:
Name of ways: **Summer Street, Homestead Street and Church Street**

29. Location of existing sidewalks within 1000 feet of the proposed site: **East side of Central Street**

30. Location of proposed sidewalks and their connection to existing sidewalks: **a sidewalk is proposed at 212-214 Central Street. No connection is being proposed to an existing sidewalk.**

31. Are there parcels of undeveloped land adjacent to the proposed site? ___yes _X_ no

Will access to these undeveloped parcels been provided within the proposed site?
___yes __ no

If yes, please describe_____

If no, please explain why _____

C. Utilities and Municipal Services

32. If dwelling units are to be constructed, what is the total number of bedrooms proposed? **8**

33. If the proposed use of the site is nonresidential, what will the site be specifically used for and how many feet of Gross floor area will be constructed? **N/A site is residential**

34. Storm Drainage

    a. Describe nature, location and surface water body receiving current surface water of the site: **Because of the high infiltration rate there is very little runoff. The small amount of runoff from the existing site flows onto Willow Street and Central Street where it enters a closed drainage system before discharging into Fort Pond Brook.**

    b. Describe the proposed storm drainage system and how it will be altered by the proposed development: **The proposed system of drainage will consist of roof drain drywells, and an infiltration trench, taking advantage of the sites permeable soil.**

    c. Will a NPDS Permit be required? ___yes _X__ no

35. In the event of fire, estimate the response time of the fire department (consult with Fire Dept.) **3-4 Minutes. (West Acton Fire Station at 258 Central Street is 600' from the site)**
36. Schools (if residential)
    a. Projected number of new school age children: **1.67 x 3 new units = 5.01**
    b. Distance to nearest school: **2950'+/- to Gates School at end of Spruce Street**

E. Measures to Mitigate Impacts

Attach brief descriptions of the measures that will be taken to:

37. Prevent surface water contamination.

38. Prevent groundwater contamination.

39. Maximize groundwater recharge.

40. Prevent erosion and sedimentation.

41. Maintain slope stability.

42. Design the project to conserve energy.

43. Preserve wildlife habitat.

44. Preserve wetlands.

45. Ensure compatibility with the surrounding land uses.

46. Control peak runoff from the site so that the post-development rate of runoff will be no greater than the predevelopment rate of runoff for the 10-year storm event..

47. Preserve historically significant structure sand features on the site.

48. To mitigate the impact of the traffic generated by the development.

Please use layman's terms where possible while still being accurate and comprehensive. Where appropriate, graphics shall be used. List sources of data, reference materials, and methodology used to determine all conclusions. Use additional sheets as necessary.

37. Prevent surface water contamination: **During construction, any silt, construction debris, etc. shall be removed from the public way or abutting property immediately upon discovery and all sediments spilled, dropped, or washed into public rights-of-ways shall also be removed immediately. Fill material used shall be free of hazardous material and construction debris. The developer shall comply with the Erosion and Sedimentation Control Plan.**

38. Prevent groundwater contamination: **The septic system on each lot will be designed to meet or exceed Title V and the Town of Acton Board of Health standards. Each lot will be served by town water.**

39. Maximize groundwater recharge: **Re-charge of runoff for the site will be provided within the proposed drainage system.**

40. Prevent erosion and sedimentation: **During construction, any silt, construction debris, etc. shall be removed from the public way or abutting property immediately upon discovery and all sediments spilled, dropped, or washed into public rights-of-ways shall also be removed immediately. Fill material used shall be free of hazardous material and construction debris. The developer shall comply with the Erosion and Sedimentation Control Plan.**

41. Maintain slope stability: **Cut and fill slopes, if any, will be stabilized immediately with six inches (6") of loam and seed during the growing season (April 1 to November 1) or with hay-mulch during the non-growing season (November 1 to April 1). An Erosion and Sedimentation Control Plan has been prepared, which will provide the necessary details.**

42. Design the project to conserve energy: **The proposed dwellings will meet the stringent requirements of the state and local building codes.**

43. Preserve wildlife habitat: **The site is not located within an area of estimated habitat of rare wildlife and the site has been previously developed and does not provide wildlife habitat.**

44. Preserve wetlands: **There are no wetlands located within the site.**

45. Ensure compatibility with the surrounding land uses: **The surrounding land uses are composed of residential single-family homes along Willow Street and Central Street. The existing and proposed use of the property is also residential. The approval of this comprehensive permit will maintain the feel of a small neighborhood.**

46. Control peak runoff from the site so that the post-development rate of runoff will be no greater than the predevelopment: **Control of peak rates of runoff will be realized using basic drainage techniques including an infiltration trench, roof drain drywells.**

47. Preserve historically significant structures and features on the site: **N/A**

48. To mitigate the impact of the traffic generated by the development: **The project will generate traffic from the proposed two building, three-unit residential development. The vehicle trips generated from this proposed development are insignificant and will not require**

mitigation. The trip generation is also below the typical thresholds requiring traffic studies in the town of Acton.

EXISTING SITE CONDITIONS

3.6 Existing Site Conditions

Existing site conditions report for 28 Willow Street and 212-214 Central Street.

The subject property consists of two adjoining parcels of land in a residential neighborhood in West Acton. There are no wetlands on site and the two parcels combined are 15,335 square feet. The current zoning is VR (village residential). Central Street and Willow Street are generally flat and the intersection of Central and Willow Streets is approximately 300 feet from the property. The intersection of Summer Street with Willow and Central Streets being 700 feet and 600 feet respectively. It is located within 1.3 miles from the MBTA South Acton Commuter Rail Stop, which is on the Fitchburg to North Station line. It is within walking distance to elementary school and preschool, conservation trails, playground, post office, churches, library, community theatre, and several businesses. 28 Willow Street contains approximately 2,000 square feet of an existing office/garage building. The office/garage building is in serious disrepair. It is a safety hazard as well as an eyesore and will be razed. The property was most recently used as a septic system installation and repair company. These parcels were taken by the town of Acton for unpaid back taxes in 1998. The town of Acton has spent over $70,000 for significant environmental remediation work through the 21E process to clean a petroleum contamination problem. The site has been cleaned under the supervision of a licensed site professional and approved for residential use.

DRAINAGE CALCULATIONS

3.9 Drainage Calculations

Drainage Calculations for 28 Willow Street and 212-214 Central Street.

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DRAINAGE DESIGN

Roof drain drywell sizing calculations

*Infiltration rate of soil: 8.27 in/hr (16.54 ft/day)

Rainfall from 100-year storm event: 6.4 in

Roof area: 1,311 sf

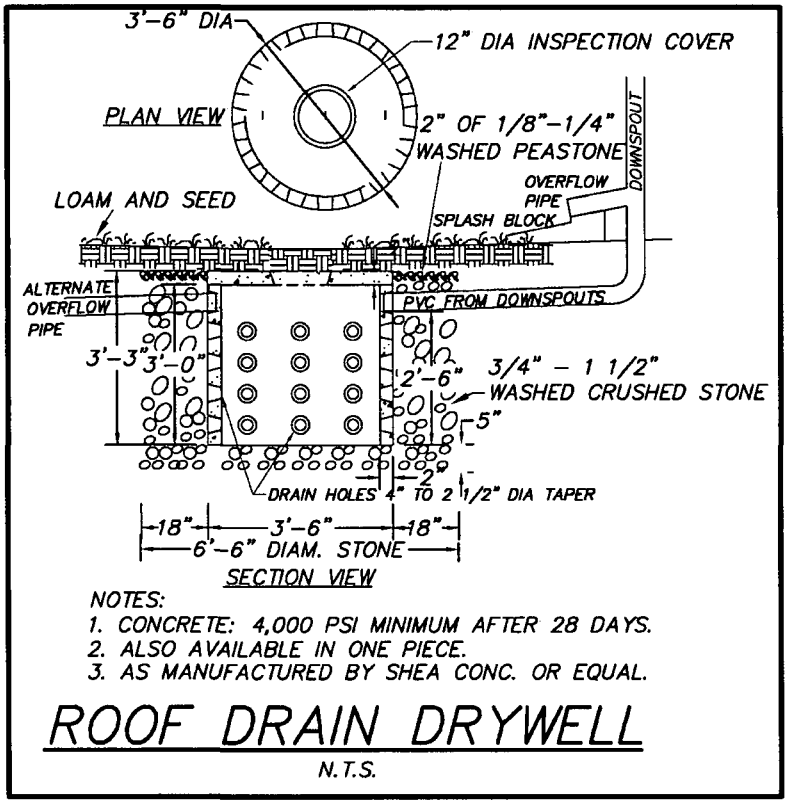
Runoff from roof: 1,311 sf x (6.4 in /12) = 699 cf

Required drywell size to infiltrate runoff in 1 day: 699 cf / 16.5 ft/day = 42.4 sf

A drywell with 42.4 sf of leaching area is required to infiltrate the 100-year storm event in 24 hours.

Proposed: 2-drywells with 210 sf of leaching area (105 sf each).

Conclusion: the proposed drywells with 210 sf of leaching area is larger than the required leaching area of 42.4 sf. Therefore, the proposed roof drain drywell will infiltrate the 100-year storm event in 24 hours.



* See table 2-1

Infiltration Trench sizing calculations

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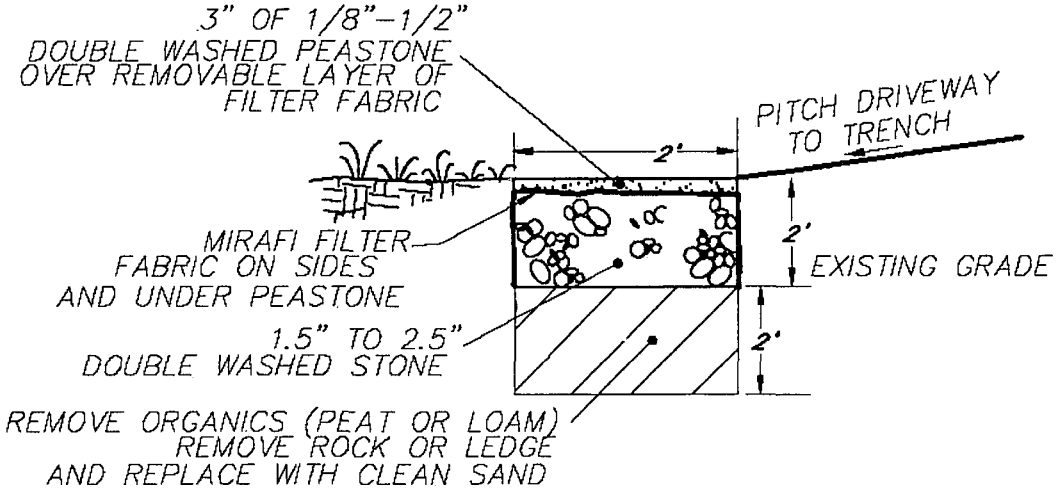
Proposed: an infiltration trench 30' long x 2' wide x 2' deep (6 sf of leaching area per foot of trench).

Conclusion: the proposed infiltration trench with 180 sf of leaching area is larger than the required leaching area of 23 sf. Therefore, the proposed infiltration trench will infiltrate the 100-year storm event in 24 hours.



INFILTRATION TRENCH DETAIL

NOT TO SCALE

TABLE 2-1 HYDROLOGIC SOIL PROPERTIES CLASSIFIED BY SOIL TEXTURE*

Texture Class	Effective Water Capacity (C_w)	Minimum Infiltration Rate (f)	Hydrologic Soil Grouping
Sand	0.35	8.27	A
Loamy Sand	0.31	2.41	A
Sandy Loam	0.25	1.02	B
Loam	0.19	.52	B
Silt Loam	0.17	.27	C
Sandy Clay Loam	0.14	17	C
Clay Loam	0.14	.09	D
Silty Clay Loam	0.11	.06	D
Sandy Clay	0.09	.05	D
Silty Clay	0.09	.04	D
Clay	0.08	.02	D

* Source: Rawls, Brakensiek and Saxton, 1982

$$\frac{8.27\ IN}{HR} \times \frac{1\ FT}{12\ IN} \times \frac{24\ HR}{1\ DAY} = 16.54\ FT/DAY$$

WATER BALANCE CALCULATIONS

3.11 Water Balance Calculations

Water Balance Calculations for 28 Willow Street and 212-214 Central Street.

The subject property contains an existing office/garage building that will be razed and has approximately 2,090 square feet of roof area. The remainder of the property contains grass and some trees. There will be, under proposed conditions, approximately 1,570 square feet of pavement and approximately 2,268 square feet of roof area. The remainder of the proposed site will be grass with some shrubs. The total proposed impervious area is 3,856 square feet. Since there is more impervious under proposed conditions, the difference needs to be mitigated. The difference is 1,766 square feet (3,856 – 2,090). Runoff from 1,836 square feet of proposed impervious area (runoff from the roof and driveway at 28 Willow Street and runoff from a portion of the roof at 214 Central Street) will be directly recharged via roof drain drywells and an infiltration trench. The proposed septic systems have a combined flow rate of 990 gallons per day, which is directly recharged. The amount of infiltration proposed after development is greater than the amount of infiltration under current conditions. Therefore, the proposed site will meet the requirement of the town of Acton, Zoning Bylaw, Section 4.3, Groundwater Protection District, which requires the amount of annual precipitation being captured and recharged shall not be reduced due to development.

EARTH REMOVAL CALCULATIONS

3.10 Earth Removal Calculations

Earth removal calculations for 28 Willow Street and 212-214 Central Street.

	Cut (cy)	Fill (cy)
Excavation for Cellar holes	544	
Excavation for Septic tanks	36	
Site Grading	58	134
Total	638	134

Conclusion: 638 cy – 134 cy = 504 cy will be removed from the site.

Drainage Calculations for 28 Willow Street and 212-214 Central Street.

The subject property contains an existing office/garage building that will be razed and has approximately 2,090 square feet of roof area. The remainder of the property contains grass and some trees. There will be, under proposed conditions, approximately 1,570 square feet of pavement and approximately 2,268 square feet of roof area. The remainder of the proposed site will be grass with some shrubs. The total proposed impervious area is 3,856 square feet. Since there is more impervious under proposed conditions, runoff from the difference needs to be mitigated. The difference is 1,766 square feet (3,856 – 2,090). Runoff from 1,836 square feet of proposed impervious area (runoff from the roof and driveway at 28 Willow Street and runoff from a portion of the roof at 214 Central Street) will be directly recharged via roof drain drywells and an infiltration trench. The remaining proposed impervious area of 2,020 square feet is less than the existing impervious area of 2,090 square feet. Therefore, there will not be an increase in runoff due to development.

Existing site conditions report for 28 Willow Street and 212-214 Central Street.

The subject property consists of two adjoining parcels of land in a residential neighborhood in West Acton. There are no wetlands on site and the two parcels combined are 15,335 square feet. The current zoning is VR (village residential). Central Street and Willow Street are generally flat and the intersection of Central and Willow Streets is approximately 300 feet from the property. The intersection of Summer Street with Willow and Central Streets being 700 feet and 600 feet respectively. It is located within 1.3 miles from the MBTA South Acton Commuter Rail Stop, which is on the Fitchburg to North Station line. It is within walking distance to elementary school and preschool, conservation trails, playground, post office, churches, library, community theatre, and several businesses. 28 Willow Street contains approximately 2,000 square feet of an existing office/garage building. The office/garage building is in serious disrepair. It is a safety hazard as well as an eyesore and will be razed. The property was most recently used as a septic system installation and repair company. These parcels were taken by the town of Acton for unpaid back taxes in 1998. The town of Acton has spent over $70,000 for significant environmental remediation work through the 21E process to clean a petroleum contamination problem. The site has been cleaned under the supervision of a licensed site professional and approved for residential use.

Roof drain drywell sizing calculations

*Infiltration rate of soil: 8.27 in/hr (16.54 ft/day)

Rainfall from 100-year storm event: 6.4 in

Roof area: 1,311 sf

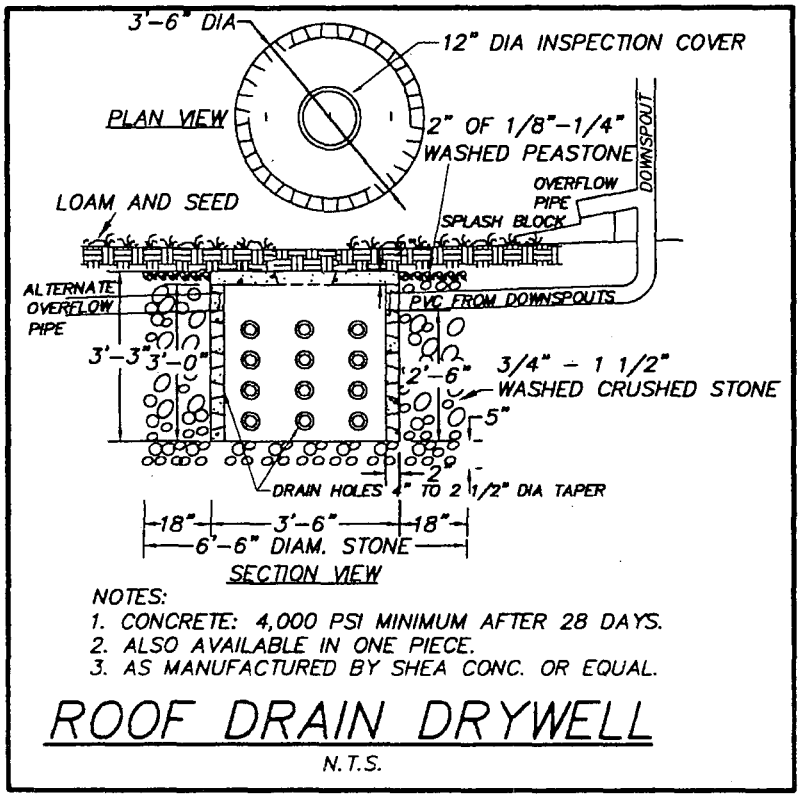
Runoff from roof: 1,311 sf x (6.4 in /12) = 699 cf

Required drywell size to infiltrate runoff in 1 day: 699 cf / 16.5 ft/day = 42.4 sf

A drywell with 42.4 sf of leaching area is required to infiltrate the 100-year storm event in 24 hours.

Proposed: 2-drywells with 210 sf of leaching area (105 sf each).

Conclusion: the proposed drywells with 210 sf of leaching area is larger than the required leaching area of 42.4 sf. Therefore, the proposed roof drain drywell will infiltrate the 100-year storm event in 24 hours.



* See table 2-1

Infiltration Trench sizing calculations

*Infiltration rate of soil: 8.27 in/hr (16.54 ft/day)

Rainfall from 100-year storm event: 6.4 in

Paved driveway area: 709 sf

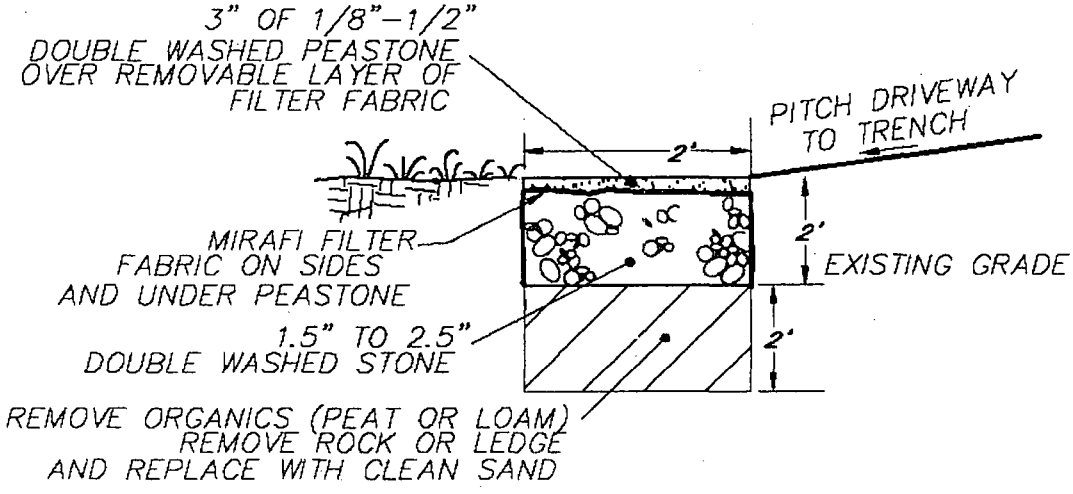
Runoff from driveway: 709 sf x (6.4 in /12) = 378 cf

Required trench size to infiltrate runoff in 1 day: 378 cf / 16.5 ft/day = 23 sf

An infiltration trench with 23 sf of leaching area is required to infiltrate the 100-year storm event in 24 hours.

Proposed: an infiltration trench 30' long x 2' wide x 2' deep (6 sf of leaching area per foot of trench).

Conclusion: the proposed infiltration trench with 180 sf of leaching area is larger than the required leaching area of 23 sf. Therefore, the proposed infiltration trench will infiltrate the 100-year storm event in 24 hours.



INFILTRATION TRENCH DETAIL

NOT TO SCALE

TABLE 2-1 HYDROLOGIC SOIL PROPERTIES CLASSIFIED BY SOIL TEXTURE*

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Sandy Clay	0.09	.05	D
Silty Clay	0.09	.04	D
Clay	0.08	.02	D

* Source: Rawls, Brakensiek and Saxton, 1982

$$\frac{8.27\ \text{IN}}{\text{HR}} \times \frac{1\ \text{FT}}{12\ \text{IN}} \times \frac{24\ \text{HR}}{1\ \text{DAY}} = 16.54\ \text{FT/DAY}$$

Water Balance Calculations for 28 Willow Street and 212-214 Central Street.

The subject property contains an existing office/garage building that will be razed and has approximately 2,090 square feet of roof area. The remainder of the property contains grass and some trees. There will be, under proposed conditions, approximately 1,570 square feet of pavement and approximately 2,268 square feet of roof area. The remainder of the proposed site will be grass with some shrubs. The total proposed impervious area is 3,856 square feet. Since there is more impervious under proposed conditions, the difference needs to be mitigated. The difference is 1,766 square feet (3,856 – 2,090). Runoff from 1,836 square feet of proposed impervious area (runoff from the roof and driveway at 28 Willow Street and runoff from a portion of the roof at 214 Central Street) will be directly recharged via roof drain drywells and an infiltration trench. The proposed septic systems have a combined flow rate of 990 gallons per day, which is directly recharged. The amount of infiltration proposed after development is greater than the amount of infiltration under current conditions. Therefore, the proposed site will meet the requirement of the town of Acton, Zoning Bylaw, Section 4.3, Groundwater Protection District, which requires the amount of annual precipitation being captured and recharged shall not be reduced due to development.

Cut/fill calculations for 28 Willow Street and 212-214 Central Street.

	Cut (cy)	Fill (cy)
Excavation for Cellar holes	544	
Excavation for Septic tanks	36	
Site Grading	58	134
Total	638	134

Conclusion: 638 cy – 134 cy = 504 cy will be removed from the site.

FORM DIR

DEVELOPMENT IMPACT REPORT

The Development Impact Report (DIR) is intended to serve as a guide to the applicant in formulating the development proposal, as well as a guide to the Planning Board in its evaluation of the proposed development in the context of existing conditions and planning efforts by the Town. The DIR should be prepared as early in the development process as possible, even if certain aspects are unknown at that time. It is recommended that the various aspects of the DIR, together with a conceptual development plan, are discussed with the Planning Department staff as soon as possible, prior to the filing of an application for approval of a preliminary plan.

The DIR seeks to raise the broad range of issues generally associated with development plans in a form and in a language that is understandable to a layperson. It assesses development impacts which could possibly be avoided or mitigated if recognized early in the development process. Other portions of the DIR request information which will help the Town plan ahead and ensure adequate services in the future. It is the hope of the Planning Board that the use of the DIR, along with early consultations with the Planning Department staff and the applicant's continuing cooperation throughout the development process, will foster a development of excellent quality and design sensitive to Acton's natural and historic heritage and other community concerns.

The DIR shall be filed with an application for approval of a preliminary and a definitive subdivision plan. The DIR shall clearly and methodically assess the relationship of the proposed development to the natural, physical, and social environment. In preparing the DIR, professionals of the respective fields shall be consulted and a systematic, interdisciplinary approach shall be utilized which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning, designing and engineering of the proposed project.

DEVELOPMENT IMPACT REPORT

Please type or print information in blanks below.

1. Name of Proposed Subdivision: **28 Willow Street, 212-214 Central Street**

2. Location: **28 Willow Street, 212 Central Street, and 214 Central Street**

3. Name of Applicant(s): **Acton Community Housing Corporation**

4. Brief Description of the Proposed Project: **Comprehensive Permit for a two building, three unit housing development.**

5. Name of Individual Preparing this DIR: **George Demakarakos, P.E.**

   Address: **Stamski and McNary, Inc., 80 Harris Street, Acton, MA**

   Business Phone: **978-263-8585 x112**

6. Professional Credentials: **Commonwealth of MA Registered Professional Engineer**

A. Site Description

7. Present permitted and actual land uses by percentage of the site.

Uses	*Percentage*
Industrial	0
Commercial	0
Residential	**100**
Forest	0
Agricultural	0
Other (specify)	0

8. Total acreage on the site: **0.35+/- acres.**

Approximate Acreage	At Present	After Completion
Meadow or Brushland (non agriculture)	0	0
Forested	0	0
Agricultural (includes orchards, cropland, pasture)	0	0
Wetland	0	0
Water Surface Area	0	0
Flood Plain	0	0
Unvegetated (rock, earth, or fill)	0	0
Roads, buildings and other impervious surfaces	**0.05 +/-**	**0.08 +/-**
Other (indicate type) Lawn Area	**0.30 +/-**	**0.27 +/-**

9. List the zoning districts in which the site is located and indicate the percentage of the site in each district. *Note: be sure to include overlay zoning districts.*

District	*Percentage*
VR (Village Residential)	**100**
Groundwater Protection District Zone 3	**100**

10. Predominant soil type(s) on the site: **Soil Map Unit 626B-Merrimac Urban Land Complex**

Soil drainage (Use the US Soil Conservation Service's definition)

Soil Type	*% of the Site*
Well drained	
Moderately well drained	**100**
Poorly drained	

11. Are there bedrock outcroppings on the site? ____yes ___X__no

12. Approximate percentage of proposed site with slopes between:

Slope	*% of the Site*
0 - 10%	**100**
10 - 15%	0
greater than 15%	0

13. In which of the Groundwater Protection Districts in the site located? How close is the site to a public well?

Zone(s): **3** Proximity to a public well: **3,700'+/- (Clapp Well)**

14. Does the project site contain any species of plant or animal life that is identified as rare or endangered? (Consult with the Massachusetts National Heritage Program and the Acton Natural Resources Director).

____yes ___X__no

If yes, specify: _____

_____

15. Are there any unusual or unique features on the site such as trees larger than 30 inches D.B.H., bogs, kettle ponds, eskers, drumlins, quarries, distinctive rock formation or granite bridges?

____yes ___X__no

If yes, specify: _____

_____

16. Are there any established foot-paths running through the site or railroad right of ways?
____yes _X__no

If yes, specify:_____

_____

17. Is the site presently used by the community or neighborhood as an open space or recreation area? ____yes _X__no

Is the site adjacent to conservation land or a recreation area? ____yes _X__no

If yes, specify:_____

_____

18. Does the site include scenic views or will the proposed development cause any scenic vistas to be obstructed from view? ____yes _X__no

If yes, specify:_____

_____

19. Are there wetlands, lakes, ponds, streams, or rivers within or contiguous to the site?
____yes _X__no

If yes, specify:_____

_____

20. Is there any farmland or forest land on the site protected under Chapter 61A or 61B of the Massachusetts General Laws? ____yes _X__no

If yes, specify:_____

_____

21. Has the site ever been used for the disposal of hazardous waste? Has a 21E Study been conducted for the site? __X__yes ____no

If yes, specify results: **Site was remediated.**

22. Will the proposed activity require use and/or storage of hazardous materials, or generation of hazardous waste? ____yes _X__no

If yes, specify_____

_____

23. Does the project contain any buildings or sites of historic or archaeological significance? (Consult with the Acton Historic Commission or the Action Historical Society.)
___yes _X_ no

If yes, please describe_____

24. Is the project contiguous to or does it contain a building in a local historic district or national register district?
___yes __X__ no

25. Is the project contiguous to any section of the Isaac Davis Trail?
___yes __X__ no

If yes, please describe_____

B. Circulation System

26. What is the average weekday traffic and peak hour traffic volumes generated by the proposed subdivision?

	Single Family	Town Houses
Average weekday traffic	9.57	11.72
Average peak hour volume AM	0.75	0.88
Average peak hour volume PM	1.01	1.04

27. Existing street(s) providing access to proposed subdivision:

Name: **Willow Street** Town Classification: **Local**
Name: **Central Street** Town Classification: **Collector**

28. Existing intersection(s): list intersections located within 1000 feet of any access to the proposed development:
Name of ways: **Summer Street, Homestead Street and Church Street**

29. Location of existing sidewalks within 1000 feet of the proposed site: **East side of Central Street**

30. Location of proposed sidewalks and their connection to existing sidewalks: **a sidewalk is proposed at 212-214 Central Street. No connection is being proposed to an existing sidewalk.**

31. Are there parcels of undeveloped land adjacent to the proposed site? ___yes __X__ no

Will access to these undeveloped parcels been provided within the proposed site?
___yes ___ no

If yes, please describe_____

If no, please explain why _____

C. Utilities and Municipal Services

32. If dwelling units are to be constructed, what is the total number of bedrooms proposed? 8

33. If the proposed use of the site is nonresidential, what will the site be specifically used for and how many feet of Gross floor area will be constructed? **N/A site is residential**

34. Storm Drainage

a. Describe nature, location and surface water body receiving current surface water of the site: **Because of the high infiltration rate there is very little runoff. The small amount of runoff from the existing site flows onto Willow Street and Central Street where it enters a closed drainage system before discharging into Fort Pond Brook.**

b. Describe the proposed storm drainage system and how it will be altered by the proposed development: **The proposed system of drainage will consist of roof drain drywells, and an infiltration trench, taking advantage of the sites permeable soil.**

c. Will a NPDS Permit be required? ___yes _X__ no

35. In the event of fire, estimate the response time of the fire department (consult with Fire Dept.) **3-4 Minutes. (West Acton Fire Station at 258 Central Street is 600' from the site)**
36. Schools (if residential)
    a. Projected number of new school age children: **1.67 x 3 new units = 5.01**
    b. Distance to nearest school: **2950'+/- to Gates School at end of Spruce Street**

E. Measures to Mitigate Impacts

Attach brief descriptions of the measures that will be taken to:

37. Prevent surface water contamination.

38. Prevent groundwater contamination.

39. Maximize groundwater recharge.

40. Prevent erosion and sedimentation.

41. Maintain slope stability.

42. Design the project to conserve energy.

43. Preserve wildlife habitat.

44. Preserve wetlands.

45. Ensure compatibility with the surrounding land uses.

46. Control peak runoff from the site so that the post-development rate of runoff will be no greater than the predevelopment rate of runoff for the 10-year storm event..

47. Preserve historically significant structure sand features on the site.

48. To mitigate the impact of the traffic generated by the development.

Please use layman's terms where possible while still being accurate and comprehensive. Where appropriate, graphics shall be used. List sources of data, reference materials, and methodology used to determine all conclusions. Use additional sheets as necessary

37. Prevent surface water contamination: **During construction, any silt, construction debris, etc. shall be removed from the public way or abutting property immediately upon discovery and all sediments spilled, dropped, or washed into public rights-of-ways shall also be removed immediately. Fill material used shall be free of hazardous material and construction debris. The developer shall comply with the Erosion and Sedimentation Control Plan.**

38. Prevent groundwater contamination: **The septic system on each lot will be designed to meet or exceed Title V and the Town of Acton Board of Health standards. Each lot will be served by town water.**

39. Maximize groundwater recharge: **Re-charge of runoff for the site will be provided within the proposed drainage system.**

40. Prevent erosion and sedimentation: **During construction, any silt, construction debris, etc. shall be removed from the public way or abutting property immediately upon discovery and all sediments spilled, dropped, or washed into public rights-of-ways shall also be removed immediately. Fill material used shall be free of hazardous material and construction debris. The developer shall comply with the Erosion and Sedimentation Control Plan.**

41. Maintain slope stability: **Cut and fill slopes, if any, will be stabilized immediately with six inches (6") of loam and seed during the growing season (April 1 to November 1) or with hay-mulch during the non-growing season (November 1 to April 1). An Erosion and Sedimentation Control Plan has been prepared, which will provide the necessary details.**

42. Design the project to conserve energy: **The proposed dwellings will meet the stringent requirements of the state and local building codes.**

43. Preserve wildlife habitat: **The site is not located within an area of estimated habitat of rare wildlife and the site has been previously developed and does not provide wildlife habitat.**

44. Preserve wetlands: **There are no wetlands located within the site.**

45. Ensure compatibility with the surrounding land uses: **The surrounding land uses are composed of residential single-family homes along Willow Street and Central Street. The existing and proposed use of the property is also residential. The approval of this comprehensive permit will maintain the feel of a small neighborhood.**

46. Control peak runoff from the site so that the post-development rate of runoff will be no greater than the predevelopment: **Control of peak rates of runoff will be realized using basic drainage techniques including an infiltration trench, roof drain drywells.**

47. Preserve historically significant structures and features on the site: **N/A**

48. To mitigate the impact of the traffic generated by the development: **The project will generate traffic from the proposed two building, three-unit residential development. The vehicle trips generated from this proposed development are insignificant and will not require**

mitigation. The trip generation is also below the typical thresholds requiring traffic studies in the town of Acton.

TOWN OF ACTON
HEALTH DEPARTMENT
472 Main Street
Acton, Massachusetts, 01720
Telephone (978) 264-9634
Fax (978) 264-9630

May 9, 2006

Acton Community Housing Corporation
c/o Nancy Tavernier
35 Mohawk Drive
Acton, MA 01720

Nancy:

At their regularly scheduled meeting on May 8, 2006, the Acton Board of Health approved your two Article 11 variance requests to allow for the construction of the onsite wastewater systems to serve the proposed development at 28 Willow Street and 214 Central Street, Acton. The approvals are as follows:

11-9.1
A waiver of the requirement for 2 equal-size septic tanks when the SAS is smaller than the Acton minimum required disposal area

11-9.7
A reduction in the required separation between sidewalls of trenches, when the interstitial area is designated as the reserve area
(12' required, 9' requested)

The approvals were granted with the following conditions:

1) The applicant shall install one two-compartment 1500 gallon septic tank at each dwelling.

2) Each septic tank shall be fitted with a DEP approved effluent tee filter.

3) The septic tanks shall be pumped a minimum of once every two years.

4) The owner of each condominium unit shall be responsible for the maintenance, operation, repair, and replacement of his/her own system.

5) The system shall be built in accordance with the above conditions and a plan stamped by a Professional Engineer, registered in the Commonwealth of Massachusetts, to be submitted to the Health Department for approval.

If you have any questions regarding this approval, please contact the Acton Health Department at (978) 264-9634.

Regards,

Brent L. Reagor, R.S.
Deputy Director

Cc: Bruce Stamski

PERMIT NUMBER: 07-40NR FEE: Waived

TOWN OF ACTON – BOARD OF HEALTH

DATE: February 1, 2007

THIS IS TO CERTIFY THAT **Acton Community Housing Corporation c/o Town of Acton of PO Box 681, Acton, MA 01720**
Is Hereby granted permission to have a licensed installer install a **SEWERAGE DISPOSAL SYSTEM** on the premises at
28 Willow Street, Acton, MA 01720

APPROVED
FEB 0 1 2007
ACTON BOARD OF HEALTH

In accordance with an application received by the Board of Health on February 1, 2007 and the approved plans:

By Bruce Stamski, PE dated 5/9/2006

Approval is subject to limiting the rate of sewage disposal to not more than **330** gallons per day and pumping the septic tank every two years.

This permit expires on **2/1/2009**. Any variation during installation of the sewerage disposal system from the plans approved by the Board of Health should be reported to the design engineer and the Board of Health or their agent for their review and comment prior to continuing construction of the sewerage disposal system.

AGENT OF THE BOARD OF HEALTH

Violation of any of the requirements or conditions will cause revocation of this permit.

GENERAL REQUIREMENTS AND CONDITIONS

This installation requires compliance with Acton Board of Health regulations #11-2, #11-3, #11-3.1, #11-3.2, #11-11, #11-11.1, #11-11.2, #11-11,3. In summary these regulations require that the owner of the land is responsible for all work being done in compliance with the approved applications and plans. All work performed must be by a Disposal Works Installer who is licensed by the Town of Acton and all work must be inspected and approved by the Board of Health or its agent.

- In addition the Board of Health requires inspection of all construction by a Registered Professional Engineer and requires that such engineer certify in writing that all work has completed in accordance with the terms of the permit and the approved plans.

PERMIT NUMBER: 07-42NR FEE: Waived

TOWN OF ACTON – BOARD OF HEALTH

DATE: February 1, 2007

THIS IS TO CERTIFY THAT **Acton Community Housing Corporation c/o Town of Acton of PO Box 681 Acton, MA 01720**
Is Hereby granted permission to have a licensed installer install a **SEWERAGE DISPOSAL SYSTEM** on the premises at
212 Central Street, Acton, MA 01720

APPROVED
FEB 0 1 2007
ACTON BOARD OF HEALTH

In accordance with an application received by the Board of Health on February 1, 2007 and the approved plans:

By Bruce Stamski, PE dated 5/9/2006

Approval is subject to limiting the rate of sewage disposal to not more than **330** gallons per day and pumping the septic tank every two years.

This permit expires on **February 1, 2009**. Any variation during installation of the sewerage disposal system from the plans approved by the Board of Health should be reported to the design engineer and the Board of Health or their agent for their review and comment prior to continuing construction of the sewerage disposal system.

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- In addition the Board of Health requires inspection of all construction by a Registered Professional Engineer and requires that such engineer certify in writing that all work has completed in accordance with the terms of the permit and the approved plans.

PERMIT NUMBER: 07-41NR FEE: Waived

TOWN OF ACTON – BOARD OF HEALTH

DATE: February 1, 2007

THIS IS TO CERTIFY THAT **Acton Community Housing Corporation of PO Box 681, Acton, MA 01720**
Is Hereby granted permission to have a licensed installer install a **SEWERAGE DISPOSAL SYSTEM** on the premises at
214 Central Street, Acton, MA 01720

APPROVED
FEB 0 1 2007
ACTON BOARD
OF HEALTH

In accordance with an application received by the Board of Health on February 1, 2007 and the approved plans:

By Bruce Stamski, PE dated 5/9/2006

Approval is subject to limiting the rate of sewage disposal to not more than **330** gallons per day and pumping the septic tank every two years.

This permit expires on **February 1, 2009**. Any variation during installation of the sewerage disposal system from the plans approved by the Board of Health should be reported to the design engineer and the Board of Health or their agent for their review and comment prior to continuing construction of the sewerage disposal system.

AGENT OF THE BOARD OF HEALTH

Violation of any of the requirements or conditions will cause revocation of this permit.

GENERAL REQUIREMENTS AND CONDITIONS

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- In addition the Board of Health requires inspection of all construction by a Registered Professional Engineer and requires that such engineer certify in writing that all work has completed in accordance with the terms of the permit and the approved plans.

PERMIT NUMBER: 07-40NR FEE: Waived

TOWN OF ACTON – BOARD OF HEALTH

DATE: February 1, 2007

THIS IS TO CERTIFY THAT **Acton Community Housing Corporation c/o Town of Acton of PO Box 681, Acton, MA 01720**
Is Hereby granted permission to have a licensed installer install a **SEWERAGE DISPOSAL SYSTEM** on the premises at
28 Willow Street, Acton, MA 01720

APPROVED
FEB 0 1 2007
ACTON BOARD OF HEALTH

In accordance with an application received by the Board of Health on February 1, 2007 and the approved plans:

By Bruce Stamski, PE dated 5/9/2006

Approval is subject to limiting the rate of sewage disposal to not more than **330** gallons per day and pumping the septic tank every two years.

This permit expires on **2/1/2009**. Any variation during installation of the sewerage disposal system from the plans approved by the Board of Health should be reported to the design engineer and the Board of Health or their agent for their review and comment prior to continuing construction of the sewerage disposal system.

AGENT OF THE BOARD OF HEALTH

Violation of any of the requirements or conditions will cause revocation of this permit.

GENERAL REQUIREMENTS AND CONDITIONS

This installation requires compliance with Acton Board of Health regulations #11-2, #11-3, #11-3.1, #11-3.2, #11-11, #11-11.1, #11-11.2, #11-11,3. In summary these regulations require that the owner of the land is responsible for all work being done in compliance with the approved applications and plans. All work performed must be by a Disposal Works Installer who is licensed by the Town of Acton and all work must be inspected and approved by the Board of Health or its agent.

- In addition the Board of Health requires inspection of all construction by a Registered Professional Engineer and requires that such engineer certify in writing that all work has completed in accordance with the terms of the permit and the approved plans.

PERMIT NUMBER: 07-42NR FEE: Waived

TOWN OF ACTON – BOARD OF HEALTH

DATE: February 1, 2007

THIS IS TO CERTIFY THAT **Acton Community Housing Corporation c/o Town of Acton of PO Box 681 Acton, MA 01720**
Is Hereby granted permission to have a licensed installer install a **SEWERAGE DISPOSAL SYSTEM** on the premises at
212 Central Street, Acton, MA 01720

APPROVED
FEB 0 1 2007
ACTON BOARD OF HEALTH

In accordance with an application received by the Board of Health on February 1, 2007 and the approved plans:

By Bruce Stamski, PE dated 5/9/2006

Approval is subject to limiting the rate of sewage disposal to not more than **330** gallons per day and pumping the septic tank every two years.

This permit expires on **February 1, 2009**. Any variation during installation of the sewerage disposal system from the plans approved by the Board of Health should be reported to the design engineer and the Board of Health or their agent for their review and comment prior to continuing construction of the sewerage disposal system.

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PERMIT NUMBER: 07-41NR FEE: Waived

TOWN OF ACTON – BOARD OF HEALTH

DATE: February 1, 2007

APPROVED
FEB 0 1 2007
ACTON BOARD
OF HEALTH

THIS IS TO CERTIFY THAT **Acton Community Housing Corporation of PO Box 681, Acton, MA 01720**
Is Hereby granted permission to have a licensed installer install a **SEWERAGE DISPOSAL SYSTEM** on the premises at
214 Central Street, Acton, MA 01720

In accordance with an application received by the Board of Health on February 1, 2007 and the approved plans:

By Bruce Stamski, PE dated 5/9/2006

Approval is subject to limiting the rate of sewage disposal to not more than **330** gallons per day and pumping the septic tank every two years.

This permit expires on **February 1, 2009**. Any variation during installation of the sewerage disposal system from the plans approved by the Board of Health should be reported to the design engineer and the Board of Health or their agent for their review and comment prior to continuing construction of the sewerage disposal system.

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